Rec'd PCT/PTO 23 FEB 2004

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COMMISSIONER FOR PATENTS ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 10/019,282

Applicants: Takashi SHIBATA, et al.

Filing Date: January 2, 2002

For: GENE ENCODING CYCLIC LIPOPEPTIDE

Docket No.: 217770US0PCT

ACYLASE AND EXPRESSION OF THE SAME

Group Art Unit:

Examiner:

SIR:

Attached hereto for filing are the following papers:

Petition Under 37 CFR 1.181 To Withdraw Holding of Abandonment Copy of Response to Notification of Missing Requirements Copy of Preliminary Amendment (with cover sheet) Copy of Canceled Check

Copy of Declaration and Power of Attorney (3 pages)
Copy of Date-Stamped Filing Receipt
Copy of Notification of Missing Requirments

Our check in the amount of is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,

MAIER & NEUSTADT, P.C.

Norman F. Oblon

Registration No. 24,618

Customer Number

22850

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#### IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF: : ATTN: PCT Legal Office

Takashi SHIBATA et al. : INTERNATIONAL APPLICATION NO:

SERIAL NO: 10/019,282 : PCT/JP00/04285

FILED: January 2, 2002 : INTERNATIONAL. FILING DATE:

: June 28, 2000

FOR: GENE ENCODING CYCLIC LIPOPEPTIDE ACYLASE AND EXPRESSION OF

THE SAME

# PETITION UNDER 37 C.F.R. 1.181 TO WITHDRAW HOLDING OF ABANDONMENT

COMMISSIONER OF PATENTS & TRADEMARKS Box PCT Alexandria, Virginia 22313

SIR:

Applicant respectfully petitions the U.S. PCT Office to withdraw its holding of abandonment of the above-identified application based on the evidence presented herewith.

A notification of abandonment was mailed on December 22, 2003 stating that the present application is held to be abandoned since applicant has failed to respond to the notification of missing requirements mailed 03/19/2002 within the time period set therein.

Applicants, however, have timely responded to the notification of missing requirements as evidenced by the enclosed copy of the undersigned's date-stamped filing receipt which shows that a duly executed declaration along with a response to notice of missing requirements and a preliminary amendment were filed on 11 April 2002. Applicants also submitted a check in the amount of \$942.00 to cover the additional claim fees. A copy of the canceled check is also attached hereto, as well as a copy of the papers submitted on

11 April 2002. The undersigned attorney of record hereby states that the attached copies are in fact true copies of the original papers filed on 11 April 2002.

The Office is hereby authorized to charge any additional fees which may be required, or credit any overpayment to our Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

Applicant therefore believes that sufficient evidence has been presented to withdraw the holding of abandonment. An early and favorable action is hereby solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND MAIER & NEUSTADT, P.C.

Marvin J. Spivak

Registration No. 24,913

Surinder Sachar

Registration No. 34,423 Attorneys of Record

CUSTOMER NUMBER 22050

1940 Duke Street Alexandria, Virginia 22314 (703) 413-3000 O.S.&M. File No. 217770US0PCT

By NFO/rkm/FF

Due date

05/19/02

Serial No. 10/019,282

In the Matter of the Application of Takashi SHIBATA et al.

For GENE ENCODING CYCLIC LIPOPEPTIDE ACYLASE AND EXPRESSION OF THE SAME

The following has been received in the U.S. Patent Office on the date stamped hereon:

- [ ] \_\_ pgs. Specification, \_\_Claims (English Translation)
- [>] Response to Notice of Missing Requirement Under 35 U.S.C. 371
- [>] Combined Declaration, Petition & Power of Attorney (3 pages)
- [▶] Copy of Notification of Missing Requirements
- [>] Preliminary Amendment
- [] Petition for Extension of Time
- [>] Check for \$942.00; [>] Dep. Acct. Order Form
- [] Verified Statement (Declaration) Claiming Small Entity Status
- [ ] Submission of Verified Statement (Dec.) Claiming Small Entity Status
- [] Declaration of \_\_\_\_\_
- [] Letter Requesting Approval of Drawing Changes
- [] Drawings \_\_\_ sheets
- [] List of Related Cases
- [] Information Disclosure Statement; [] PTO-1449
- [] Cited References ( )
- [] \_\_\_\_\_ Search Report
- [] Statement of Relevancy

DATE RECEIVED' d PCT/PTO 11 APR 2002

COPY

266289 OBLON, SPIVAK, McCLELLAND, FIRST UNION NATIONAL BANK MAIER, & NEUSTADT, P.C. CRYSTAL SQUARE FIVE SUITE 400 1755 JEFFERSON DAVIS HWY ARLINGTON, VA 22202 VIENNA, VA ×266289 68-760/560 NINE HUNDRED FORTY TWO AND 00/100 DOLLARS COMMISSIONER OF PATENTS & TRADEMARKS VOID IF NOT CASHED WITHIN 90 DAYS







## UNITED STATES PATENT AND TRADEMARK OFFICE

Contrassioner for Patients, Box PCT United States Patent and Tradomark Office Washington, D.C., 2023

ATTY. DOCKET NO. FIRST NAMED APPLICANT U.S. APPLICATION NUMBER NO. 217770US0PCT Takashi Shibata 10/019,282

INTERNATIONAL APPLICATION NO.

PCT/JP00/04285

22850 OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC FOURTH FLOOR 1755 JEFFERSON DAVIS HIGHWAY ARLINGTON, VA 22202

PRIORITY DATE I.A. FILING DATE 07/02/1999 06/28/2000

**CONFIRMATION NO. 7785 371 FORMALITIES LETTER** 

OC000000007659404\*

Date Mailed: 03/19/2002

## NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

- U.S. Basic National Fees
- **Priority Document**
- Biochemical Sequence Listing
- Copy of IPE Report
- Copy of references cited in ISR
- Copy of the International Application
- Copy of the International Search Report
- Information Disclosure Statements
- Request for Immediate Examination

OBLON, SPIVAK, McCLELLAND MAIER & NEUSTANT PC.

The following items MUST be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTH FROM THE DATE OF THIS NOTICE OR BY 22 or 32 MONTHS (where 37 CFR 1.495 applies) FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

The following items MUST be furnished within the period set forth below:





- The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reason(s):
  - A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).
  - APPLICANT MUST PROVIDE:
    - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
- For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:
  - For Rules Interpretation, call (703) 308-4216
  - To Purchase Patentin Software, call (703) 306-2600
  - For Patentin Software Program Help, call (703) 306-4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov
  - A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice MUST be returned with the response.

CHRISTINE S WASHINGTON

Telephone: (703) 305-3752

#### PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY, DOCKET NO.
10/019.282	PCT/JP00/04285	217770US0PCT

FORM PCT/DO/EO/905 (371 Formalities Notice)



Takashi SHIBATA et al.



Docket No.

217770US0PCT

IN RE APPLICATION OF:

SERIAL NO: 10/019,282

FILED:

January 2, 2002

FOR:

GENE ENCODING CYCLIC LIPOPEPTIDE ACYLASE AND EXPRESSION OF THE SAME

ASSISTANT COMMISSIONER FOR PATENTS WASHINGTON, D.C. 20231

CI	T	

Transmitted herewith is an amendment in the above-identified application.

☐ No additional fee is required

☐ Small entity status of this application under 37 C.F.R. §1.9 and §1.27 is claimed.

Additional documents filed herewith:

Response to Notification/Notification of Missing Requirements/Filing Receipt

Declaration/Check for \$942.00

The Fee has been calculated as shown below:

CLAIMS	CLAIMS REMAINING		HIGHEST NUMBER PREVIOUSLY PAID	NO. EXTRA CLAIMS		RATE		CALCULATIONS
TOTAL	49	MINUS	20	29	х	\$18	=	\$522.00
INDEPENDENT	8	MINUS	3	5	х	\$84	=	\$420.00
INDEPENDENT			E DEPENDENT	CLAIMS	+	\$280	=	\$0.00
		- Mostar		ABOVE CAI	CU	LATIO	NS	\$942.00
		☐ Reduction	by 50% for filing					\$0.00
			on of Assignment	-	+	\$40	=	\$0.00
						TOT	AL	\$942.00

- $\boxtimes$  A check in the amount of \$942.00 is attached.
- Please charge any additional Fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.
- ☑ If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time may be charged to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

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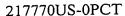
Customer Number 22850 Tel. (703) 413-3000 Fax. (703) 413-2220 (OSMMN 10/01) OBLON, SPIVAK, McCLELLAND, MAJER& MEUSTADY, R.C.7

Norman F. Oblon

Registration No. 24,618

Surinder Sachar

Registration No. 34,423



## IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

:

TAKASHI SHIBATA ET AL

: ATTN: APPLICATION DIVISION

SERIAL NO: 10/019,282

:

FILED: JANUARY 2, 2002

:

FOR: GENE ENCODING CYCLIC

LIPOPEPTIDE ACYLASE AND EXPRESSION OF THE SAME

## PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS WASHINGTON, D.C. 20231

SIR:

Prior to examination on the merits, please amend the above-identified application as follows.

#### IN THE CLAIMS

Please amend the claims as shown on the marked-up copy following this amendment to read as follows.

- 3. (Amended) A recombinant vector comprising the gene of claim 1.
- 4. (Amended) An expression vector functionally comprising the gene of claim 1.
- 5. (Amended) A transformant obtained by transforming a host cell with the vector of claim 3.
  - 10. (Amended) A recombinant vector comprising the gene of claim 8.
  - 11. (Amended) An expression vector functionally comprising the gene of claim 8.

- 12. (Amended) A transformant obtained by transforming a host cell with a vector of claim 10.
  - 21. (Amended) A recombinant vector comprising the DNA of claim 19.
  - 22. (Amended) An expression vector comprising the DNA of claim 19.
- 23. (Amended) A transformant obtained by transforming a host cell with the vector of claim 21.
- 26. (Amended) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprises culturing a host cell transformed with the expression vector of claim 4, and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.

Please add the following new claims.

- 27. (New) A recombinant vector comprising the gene of claim 2.
- 28. (New) An expression vector functionally comprising the gene of claim 2.
- 29. (New) A transformant obtained by transforming a host cell with the vector of claim 4.
- 30. (New) A transformant obtained by transforming a host cell with the vector of claim 27.
- 31. (New) A transformant obtained by transforming a host cell with the vector of claim 28.
- 32. (New) A method of producing cyclic lipopeptide acylase, which comprises culturing a host cell transformed with the expression vector of claim 28, and harvesting, from the obtained culture, cyclic lipopeptide acylase capable of catalyzing a reaction to deacylate a side chain acylamino group of a cyclic lipopeptide substance into an amino group.

- 33. (New) A cyclic lipopeptide acylase produced by the production method of claim32.
  - 34. (New) A recombinant vector comprising the gene of claim 9.
  - 35. (New) An expression vector functionally comprising the gene of claim 9.
- 36. (New) A transformant obtained by transforming a host cell with a vector of claim 34.
- 37. (New) A transformant obtained by transforming a host cell with a vector of claim 35.
- 38. (New) A method of producing cyclic lipopeptide acylase, which comprises culturing a host cell transformed with the expression vector of claim 35, and harvesting, from the obtained culture, cyclic lipopeptide acylase capable of catalyzing a reaction to deacylate a side chain acylamino group of a cyclic lipopeptide substance into an amino group.
- 39. (New) A cyclic lipopeptide acylase produced by the production method of claim 38.
  - 40. (New) A recombinant vector comprising the DNA of claim 20.
  - 41. (New) An expression vector comprising the DNA of claim 20.
- 42. (New) A transformant obtained by transforming a host cell with the vector of claim 40.
- 43. (New) A transformant obtained by transforming a host cell with the vector of claim 41.
- 44. (New) A method of producing cyclic lipopeptide acylase, which comprises culturing a host cell transformed with the expression vector of claim 41, and harvesting, from the obtained culture, cyclic lipopeptide acylase capable of catalyzing a reaction to deacylate a side chain acylamino group of a cyclic lipopeptide substance into an amino group.

- 45. (New) A cyclic lipopeptide acylase produced by the production method of claim
  44.
- 46. (New) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprising culturing a host cell transformed with the expression vector of claim 11 and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.
- 47. (New) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprising culturing a host cell transformed with the expression vector of claim 35 and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.
- 48. (New) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprising culturing a host cell transformed with the expression vector of claim 22 and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.
- 49. (New) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprising culturing a host cell transformed with the expression vector of claim 41 and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.

## **REMARKS**

Claims 1-49 are active in the present application. Claims 3-5, 10-12, 21-23 and 26 have been amended to remove multiple dependencies. Claims 27-49 are new claims.

Support for the new claims is found in the original claims. No new matter is added. An action on the merits and allowance of claims is solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT, P.C.

COPY

Norman F. Oblon Attorney of Record Registration No. 24,618

Stefan U. Koschmieder, Ph.D. Registration No. 50,238

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(703) 413-3000 Fax #: (703)413-2220

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Marked-Up Copy

Serial No: 09/926,851 Amendment Filed on:

#### IN THE CLAIMS

Please amend the claims as follows.

- --3. (Amended) A recombinant vector comprising the gene of claim 1 [or 2].
- 4. (Amended) An expression vector functionally comprising the gene of claim 1 [or 2].
- 5. (Amended) A transformant obtained by transforming a host cell with the vector of claim 3 [or 4].
  - 10. (Amended) A recombinant vector comprising the gene of claim 8 [or 9].
- 11. (Amended) An expression vector functionally comprising the gene of claim 8 [or 9].
- 12. (Amended) A transformant obtained by transforming a host cell with a vector of claim 10 [or 11].
- 21. (Amended) A recombinant vector comprising [at least one of claim 19 and claim 20] the DNA of claim 19.
- 22. (Amended) An expression vector comprising [at least one of claim 19 and 20] the DNA of claim 19.
- 23. (Amended) A transformant obtained by transforming a host cell with the vector of claim 21 [or 22].

26. (Amended) A method for deacylating a side chain acylamino group of a cyclic lipopeptide substance into an amino group, which method comprises culturing a host cell transformed with the expression vector of claim 4, [11 or 22,] and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.-- Claims 27-49 (New).

DOCKET NO.: 217770US0PCT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Takashi SHIBATA et al.

SERIAL NUMBER: 10/019,282

FILED: January 2, 2002

FOR: GENE ENCODING CYCLIC LIPOPEPTIDE ACYLASE AND EXPRESSION OF THE

**SAME** 

## RESPONSE TO NOTICE OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371

ASSISTANT COMMISSIONER FOR PATENTS & TRADEMARKS WASHINGTON, D.C. 20231

SIR:

Responsive to the notification dated 19 March 2002, and in accordance with the provisions of 35 U.S.C. 371, Applicants submit herewith a Rule 63 Declaration and a Preliminary Amendment. As a result of the Preliminary Amendment, no multiple dependencies remain in the claims. Accordingly, no additional claim fees are due.

The required surcharge was paid at the time of filing the application.

In light of the foregoing, this application is deemed to be in proper condition for examination and such favorable action is earnestly solicited.

Our check in the amount of \$-942.00- is attached hereto. If any variance exists between the amount enclosed and the required Government fee, please charge or credit the difference to our Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136 and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time may be charged to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND

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Norman F. Oblon Attorney of Record Registration No. 24,618 Surinder Sachar Registration No. 34,423



Page 1 of 3

WE (I) the undersigned inventor(s), hereby declare(s) that:

My residence, post office address and citizenship are as stated below next to my name, We (I) believe that we are (I am) the original, first, and joint (sole) inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled GENE ENCODING CYCLIC LIPOPEPTIDE ACYLASE AND EXPRESSION OF THE SAME the specification of which is attached hereto. was filed on January 2, 2002 as Application Serial No. 10/019,282 and amended on \_\_\_\_ x was filed as PCT international application Number PCT/JP00/04285 on June 28, 2000 and was amended under PCT Article 19 \_ (if applicable). We (I) hereby state that we (I) have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. We (I) acknowledge the duty to disclose information known to be material to the patentability of this application as defined in Section 1.56 of Title 37 Code of Federal Regulations. We (I) hereby claim foreign priority benefits under 35 U.S.C. § 1 19(a)-(d) or § 365(b,) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed. Prior Foreign Application(s) Priority Claimed Day/Month/Year Country Application No. □No 189644/1999\_ Japan □No □No

□No



Declaration We (I) hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below. (Filing Date) (Application Number) (Application Number) (Filing Date) We (I) hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application. Status (pending, patented, abandoned) Filing Date Application Serial No. June 28, 2000 pending PCT/JP00/04285 And we (I) hereby appoint: Norman F. Oblon, Registration Number 24,618; Marvin J. Spivak, Registration Number 24,913; C. Irvin McClelland, Registration Number 21,124; Gregory J. Maier, Registration Number 25,599; Arthur I. Neustadt, Registration Number 24,854; Richard D. Kelly, Registration Number 27,757; James D. Hamilton, Registration Number 28,421; Eckhard H. Kuesters, Registration Number 28,870; Robert T. Pous, Registration Number 29,099; Charles L. Gholz, Registration Number 26,395; Vincent J. Sunderdick, Registration Number 29,004; William E. Beaumont, Registration Number 30,996; Steven B. Kelber, Registration Number 30,073; Robert F. Gnuse, Registration Number 27,295; Jean-Paul Lavalleye, Registration Number 31,451; Timothy R. Schwart, Registration Number 32,171; Stephen G. Baxter, Registration Number 32,884; Martin M. Zoltick, Registration Number 35,745; Robert W. Hahl, Registration Number 33,893; Richard L. Treanor, Registration Number 36,379; Steven P. Weihrouch, Registration Number 32,829; John T. Goolkasian, Registration Number 26,142; Marc R. Labgold, Registration Number 34,651; William J. Healey, Registration Number 36,160; Richard L. Chinn, Registration Number 34,305; Steven E. Lipman, Registration Number 30,011; Carl E. Schlier, Registration Number 34,426; James J. Kulbaski, Registration Number 34,648; Catherine B. Richardson, Registration Number 39,007; Richard A. Neifeld, Registration Number 35,299; J. Derek Mason, Registration Number 35,270; and Jacques M. Dulin, Registration Number 24,067; our (my) attorneys, with full powers of substitution and revocation, to prosecute this application and to transact all business in the Patent Office connected therewith; and we (I) hereby request that all correspondence regarding this application be sent to the firm of OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT, P.C., whose Post Office Address is: Fourth Floor, 1755 Jefferson Davis Highway, Arlington, Virginia 22202. We (I) declare that all statements made herein of our (my) own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Tide 18 of the United States Code and that such willfull false statements may jeapordize the validity of the application or any patent issuing thereon. Residence: Tsukuba-shi, Ibaraki, Japan Takashi SHIBATA NAME OF FIRST JOINT INVENTOR Citizen of: Japan

Date

January 7, 2002

Signature of Inventor

Post Office Address: 1-20-11-308, Ninomiya, Tsukuba-shi,

Ibaraki 305-0051 Japan

Yuji NOGUCHI	Residence: Ama-gun, Aichi, Japan
NAME OF SECOND JOINT INVENTOR	
Juji hoguchi Signature of Inventor	Citizen of:
	Post Office Address: 31-1, Aza-Gotanda,
	Oaza-Shimokayatsu, Jimokuji-cho, Ama-gun, Aichi
January 8, 2002	490-1114 Japan
Date	
Michio YAMASHITA	Residence: Tsukuba-shi, Ibaraki, Japan
NAME OF THIRD JOINT INVENTOR	
Micho Jamashit	Citizen of: Japan
Signature of Inventor	Post Office Address: 3-11-11, Namiki, Tsukuba-shi,
$\mathcal{O}$	Ibaraki 305-0044 Japan
January 7, 2002	
Date	